

전자정부표준프레임워크 기반의 Open PaaS 개발

Bosh Lite 설치 가이드

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Executive Summary

본 문서는 BOSH Lite에 대한 설치 가이드이다. BOSH Lite를 설치하고 기본 설정하는 부분을 설명하였다.

본 문서는 다음과 같은 내용들을 포함한다.

* BOSH Lite 설치
* OpenPaaS Container 설치, 배포 및 설정

# 문서 개요

## ***목적***

클라우드 환경에 서비스 시스템을 배포할 수 있는 BOSH는 릴리즈 엔지니어링, 개발, 소프트웨어 라이프사이클 관리를 통합한 오픈소스 프로젝트이다. 특히, BOSH Lite는 사용자가 BOSH를 실제 환경에 도입하기 전에 로컬 환경에서 BOSH의 주요 기능을 검증하기 위한 프로젝트이다. 본 문서는 로컬 환경에서 BOSH Lite를 설치하고, BOSH 기능을 테스트 할 수 있는 환경을 구축하는 것이 목표이다.

## ***범위***

가이드 범위는 BOSH Lite 설치하고, 설치한 BOSH Lite에 Warden OpenPaaS를 릴리즈하는 것까지 기술하였다.

## ***참고자료***

본 문서는 Cloud Foundry의 BOSH Document를 참고로 작성하였다.

Bosh Lite 설치: <https://github.com/cloudfoundry/bosh-lite>

OpenPaaS Container 배포: <https://github.com/cloudfoundry-incubator/diego-release>

# BOSH Lite 설치

## ***설치전 준비사항***

본 설치 가이드는 Linux(Ubuntu 14.04 64bit) 환경에서 설치하는 것을 기준으로 하였다. BOSH Lite는 Ruby언어로 되었기 때문에 BOSH Lite를 실행하기 Ruby가 설치되어 있어야 한다. 또한 BOSH Lite가 설치한 가상 머신을 구동할 가상 환경과 가상 환경을 설치하기 위한 도구로써 Virtualbox와 Vagrant를 설치해야 한다.

* 환경구성에 필요한 OpenPaaS 설치패키지
  + OpenPaaS-Env
  + OpenPaaS-Dev-Tools
* 메모리: 6GB의 메모리를 가진 가상 머신을 구동할 수 있는 여유 메모리
* 디스크: 최소 80GB 이상의 여유 디스크
* 위의 조건을 충족하는 Linux 또는 OSX 환경 (BOSH는 Window 환경을 지원하지 않는다. 참조: https://github.com/cloudfoundry-community/bosh-lite-demo)

## ***OpenPaaS 설치패키지 다운로드***

OpenPaaS 설치패키지를 다운받아 다운로드한 디렉토리에 압축해제 한다.

1. OpenPaaS 설치패키지를 다음 사이트에서 다운로드 한다.

|  |
| --- |
| **http://openpaas.org** |

1. 패키지 압축해제

|  |
| --- |
| **#패키지의 확장자가 tar.gz인 경우**  **$ tar -xvzf <다운로드 디렉토리>/<사이트에서 내려받은 OpenPaaS 설치패키지>.tar.gz**  **#패키지의 확장자가 zip인 경우**  **$ cd <다운로드 디렉토리>**  **$ unzip <다운로드 디렉토리>/<사이트에서 내려받은 OpenPaaS 설치패키지>.zip** |

## ***RUBY 설치***

Ruby 설치 절차는 다음과 같다.

1. Ruby 설치에 필요한 Dependency들을 설치한다.

* **온라인인 경우(권장)**

|  |
| --- |
| **$ sudo apt-get update**  **$ sudo apt-get install git-core curl zlib1g-dev build-essential libssl-dev libreadline-dev libyaml-dev libsqlite3-dev sqlite3 libxml2-dev libxslt1-dev libcurl4-openssl-dev python-software-properties libffi-dev** |

* **오프라인인 경우(권장)**

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| #오프라인인 경우  다음의 패키지를 수동으로 설치한다.  **$ sudo dpkg -i <다운로드 디렉토리>/OpenPaaS-Env/bosh-lite-ruby-dependency/<패키지 파일명>**   |  |  |  | | --- | --- | --- | | No | 패키지명 | 패키지 파일명 (Ubuntu trusty amd64) | | 1 | build-essential | build-essential\_11.6ubuntu6\_amd64.deb | | 2 | cluster-glue-dev | comerr-dev\_2.1-1.42.9-3ubuntu1.2\_amd64.deb | | 3 | dpkg-dev | dpkg-dev\_1.17.5ubuntu5.4\_all.deb | | 4 | fakeroot | fakeroot\_1.20-3ubuntu2\_amd64.deb | | 5 | g++ | g++\_4%3a4.8.2-1ubuntu6\_amd64.deb | | 6 | g++-4.8 | g++-4.8\_4.8.4-2ubuntu1~14.04\_amd64.deb | | 7 | git | git\_1%3a1.9.1-1ubuntu0.1\_amd64.deb | | 8 | git-core | git-core\_1%3a1.9.1-1ubuntu0.1\_all.deb | | 9 | git-man | git-man\_1%3a1.9.1-1ubuntu0.1\_all.deb | | 10 | libdevel | krb5-multidev\_1.12+dfsg-2ubuntu5.1\_amd64.deb | | 11 | libalgorithm-diff-perl | libalgorithm-diff-perl\_1.19.02-3\_all.deb | | 12 | libalgorithm-diff-xs-perl | libalgorithm-diff-xs-perl\_0.04-2build4\_amd64.deb | | 13 | libalgorithm-merge-perl | libalgorithm-merge-perl\_0.08-2\_all.deb | | 14 | libcurl4-openssl-dev | libcurl4-openssl-dev\_7.35.0-1ubuntu2.5\_amd64.deb | | 15 | liberror-perl | liberror-perl\_0.17-1.1\_all.deb | | 16 | libfakeroot | libfakeroot\_1.20-3ubuntu2\_amd64.deb | | 17 | libffi-dev | libffi-dev\_3.1~rc1+r3.0.13-12\_amd64.deb | | 18 | libgcrypt11-dev | libgcrypt11-dev\_1.5.3-2ubuntu4.2\_amd64.deb | | 19 | libgnutls-dev | libgnutls-dev\_2.12.23-12ubuntu2.2\_amd64.deb | | 20 | libgnutlsxx27 | libgnutlsxx27\_2.12.23-12ubuntu2.2\_amd64.deb | | 21 | libgpg-error-dev | libgpg-error-dev\_1.12-0.2ubuntu1\_amd64.deb | | 22 | libgssrpc4 | libgssrpc4\_1.12+dfsg-2ubuntu5.1\_amd64.deb | | 23 | libidn11-dev | libidn11-dev\_1.28-1ubuntu2\_amd64.deb | | 24 | libkadm5clnt-mit9 | libkadm5clnt-mit9\_1.12+dfsg-2ubuntu5.1\_amd64.deb | | 25 | libkadm5srv-mit9 | libkadm5srv-mit9\_1.12+dfsg-2ubuntu5.1\_amd64.deb | | 26 | libkdb5-7 | libkdb5-7\_1.12+dfsg-2ubuntu5.1\_amd64.deb | | 27 | libkrb5-dev | libkrb5-dev\_1.12+dfsg-2ubuntu5.1\_amd64.deb | | 28 | libldap2-dev | libldap2-dev\_2.4.31-1+nmu2ubuntu8.1\_amd64.deb | | 29 | libp11-kit-dev | libp11-kit-dev\_0.20.2-2ubuntu2\_amd64.deb | | 30 | libreadline6-dev | libreadline6-dev\_6.3-4ubuntu2\_amd64.deb | | 31 | libreadline-dev | libreadline-dev\_6.3-4ubuntu2\_amd64.deb | | 32 | librtmp-dev | librtmp-dev\_2.4+20121230.gitdf6c518-1\_amd64.deb | | 33 | libsqlite3-dev | libsqlite3-dev\_3.8.2-1ubuntu2.1\_amd64.deb | | 34 | libssl-dev | libssl-dev\_1.0.1f-1ubuntu2.15\_amd64.deb | | 35 | libssl-doc | libssl-doc\_1.0.1f-1ubuntu2.15\_all.deb | | 36 | libstdc++-4.8-dev | libstdc++-4.8-dev\_4.8.4-2ubuntu1~14.04\_amd64.deb | | 37 | libtasn1-6-dev | libtasn1-6-dev\_3.4-3ubuntu0.3\_amd64.deb | | 38 | libtinfo-dev | libtinfo-dev\_5.9+20140118-1ubuntu1\_amd64.deb | | 39 | libxml2-dev | libxml2-dev\_2.9.1+dfsg1-3ubuntu4.4\_amd64.deb | | 40 | libxslt1-dev | libxslt1-dev\_1.1.28-2build1\_amd64.deb | | 41 | libyaml-0-2 | libyaml-0-2\_0.1.4-3ubuntu3.1\_amd64.deb | | 42 | libyaml-dev | libyaml-dev\_0.1.4-3ubuntu3.1\_amd64.deb | | 43 | python-pycurl | python-pycurl\_7.19.3-0ubuntu3\_amd64.deb | | 44 | python-software-properties | python-software-properties\_0.92.37.3\_all.deb | | 45 | sqlite3 | sqlite3\_3.8.2-1ubuntu2.1\_amd64.deb | | 46 | zlib1g-dev | zlib1g-dev\_1%3a1.2.8.dfsg-1ubuntu1\_amd64.deb |   ***※패키지 설치시 의존관계를 유의하여 설치한다.***  ***※표의 패키지 파일명은 ubuntu trusty 64bit 버전을 기준으로 쓰여졌다.***  ※ubuntu의 다른 버전 또는 CentOS나 OSX경우 인터넷이 되는 단말기에서 아래의 패키지에 해당하는 파일을 내려받아 수동으로 설치한다.  ※오프라인인 경우, ruby dependency의 샘플 설치 스크립트를 환경에 맞게 수정하여 설치할 수도 있다.  **<다운로드 디렉토리>/OpenPaaS-Env/bosh-lite-ruby-dependency/ruby-dependency-packages.sh** |

1. 패키지에서 설치

|  |
| --- |
| **$ tar -xvzf <다운로드 디렉토리>/OpenPaaS-Env/ruby/ruby-2.2.2.tar.gz**  **$ cd ruby-2.2.2**  **$ ./configure**  **$ make**  **$ sudo make install** |

* 온라인의 경우, rvm 또는 rbenv등을 이용하여 ruby를 설치할 수 있다. 단, ruby 1.9.3버전 이상을 설치하도록 한다.

1. 설치 확인

|  |
| --- |
| **$ ruby -v**  cloud4u@XPS-15-9530:~/Downloads/OpenPaaS-Env/ruby/ruby-2.2.2$ ruby -v  ruby 2.2.2p95 (2015-04-13 revision 50295) [x86\_64-linux] |

## ***BOSH CLI 설치***

BOSH CLI의 설치 절차는 다음과 같다.

1. 설치할 환경 생성

|  |
| --- |
| **$ mkdir –p ~/workspace/bosh**  **$ cd ~/workspace/bosh** |

1. Bosh\_cli 설치

* 온라인의 경우

|  |
| --- |
| **#bosh 압축해제**  **$ unzip <다운로드 디렉토리>/OpenPaaS-Dev-Tools/bosh-cli.zip**  **#bosh\_cli 의존 패키지 설치**  **$ gem install bosh\_cli** |

* 오프라인의 경우

|  |
| --- |
| **#bosh 압축해제**  **$ unzip <다운로드 디렉토리>/OpenPaaS-Dev-Tools/bosh-cli.zip**  **#bosh\_cli 의존 패키지 압축해제**  **$ sudo tar -xvf <다운로드 디렉토리>/OpenPaaS-Env/gem-dependency/bosh\_cli\_gem\_install\_package.tar -C /usr/local/lib/ruby/gems/2.2.0**  **#압축해제한 gem 설치**  **$ sudo gem install --force --local /usr/local/lib/ruby/gems/2.2.0/cache/\*.gem** |

1. Bosh 설치 확인

|  |
| --- |
| **$ bosh**  cloud4u@XPS-15-9530:/OpenPaaS-Env/virtualbox-5.0$ bosh  BOSH CLI helps you manage your BOSH deployments and releases.  Usage: bosh [<options>] <command> [<args>]  -c, --config FILE Override configuration file. Also can be overridden by BOSH\_CONFIG environment variable. Defaults to $HOME/.bosh\_config. Override precedence is command-line option, then environment variable, then home directory.  --parallel MAX Sets the max number of parallel downloads  --[no-]color Toggle colorized output  -v, --verbose Show additional output  -q, --quiet Suppress all output  -n, --non-interactive Don't ask for user input  -N, --no-track Return Task ID and don't track  -P, --poll INTERVAL Director task polling interval  -t, --target URL Override target  -u, --user USER Override username  -p, --password PASSWORD Override password  -d, --deployment FILE Override deployment  -h, --help here you go  add blob <local\_path> [<blob\_dir>]  Add a local file as BOSH blob  alias <name> <command>  Create an alias <name> for command <command>  <<이하 생략>> |

## ***Virtualbox 및 Vagrant설치***

BOSH Lite는 가상 환경 구축을 위해 Vagrant를 사용한다. Vagrant는 완벽한 가상 개발 환경을 구축해 주는 오픈 소스이다. 또한 BOSH Lite는 가상 환경으로 Virtualbox를 사용한다.

1. VirtualBox Dependency를 설치한다.

|  |
| --- |
| **$**  **sudo dpkg -i <다운로드 디렉토리>/OpenPaaS-Env/virtualbox-dependency/libsdl1.2debian\_1.2.15-8ubuntu1\_amd64.deb**  **※패키지명: libsdl1.2debian** |

1. Virtualbox 설치

|  |
| --- |
| **#VirtualBox 설치**  **$ sudo dpkg -i <다운로드 디렉토리>/OpenPaaS-Env/virtualbox-5.0/virtualbox-5.0\_5.0.0-101573-Ubuntu-trusty\_amd64.deb**  Selecting previously unselected package virtualbox-5.0.  (Reading database ... 266543 files and directories currently installed.)  Preparing to unpack virtualbox-5.0\_5.0.0-101573-Ubuntu-trusty\_amd64.deb ...  Unpacking virtualbox-5.0 (5.0.0-101573~Ubuntu~trusty) ...  Setting up virtualbox-5.0 (5.0.0-101573~Ubuntu~trusty) ...  addgroup: The group `vboxusers' already exists as a system group. Exiting.  Stopping VirtualBox kernel modules ...done.  Uninstalling old VirtualBox DKMS kernel modules ...done.  Trying to register the VirtualBox kernel modules using DKMS ...done.  Starting VirtualBox kernel modules ...done.  Processing triggers for ureadahead (0.100.0-16) ...  ureadahead will be reprofiled on next reboot  Processing triggers for hicolor-icon-theme (0.13-1) ...  Processing triggers for shared-mime-info (1.2-0ubuntu3) ...  Processing triggers for gnome-menus (3.10.1-0ubuntu2) ...  Processing triggers for desktopenpaas-file-utils (0.22-1ubuntu1) ...  Processing triggers for bamfdaemon (0.5.1+14.04.20140409-0ubuntu1) ...  Rebuilding /usr/share/applications/bamf-2.index...  Processing triggers for mime-support (3.54ubuntu1.1) ...  **#VirtualBox 확장팩 설치**  **$ sudo VBoxManage extpack install <다운로드 디렉토리>/OpenPaaS-Env/virtualbox-5.0/Oracle\_VM\_VirtualBox\_Extension\_Pack-5.0.0-101573.vbox-extpack**  cloud4u@XPS-15-9530:~/Downloads$ sudo VBoxManage extpack install Oracle\_VM\_VirtualBox\_Extension\_Pack-5.0.0-101573.vbox-extpack 0%...10%...20%...30%...40%...50%...60%...70%...80%...90%...100%Successfully installed "Oracle VM VirtualBox Extension Pack". |

* CentOS 또는 RHEL의 경우는 \*.rpm을 설치한다.
* OSX의 경우는 VirtualBox-5.0.0-101573-OSX.dmg를 설치한다.
* VirtualBox 확장팩은 모든 OS에 공통으로 설치할 수 있다.
* 온라인의 경우 다른 버전의 virtualbox를 다운로드 받아 설치할 수 있다. 단, virtualbox 4.3.18 버전 이상을 설치해야 한다.
* 다른 버전의 virtualbox를 설치한 경우, 설치한 virtualbox와 동일한 버전의 확장팩을 다운받아 설치한다.

1. VirtualBox 설치 확인

|  |
| --- |
| **$** **VBoxManage --version**  cloud4u@XPS-15-9530:~/Downloads$ VBoxManage --version  5.0.0r101573 |

1. Vagrant 설치

|  |
| --- |
| **$ sudo dpkg -i <다운로드 디렉토리>/OpenPaaS-Env/vagrant-1.7.4/vagrant\_1.7.4\_x86\_64.deb** |

* CentOS 또는 RHEL의 경우는 \*.rpm을 설치한다.
* OSX의 경우는 vagrant\_1.7.4.dmg를 설치한다.

1. Vagrant 설치 확인

|  |
| --- |
| **$ vagrant --version**  cloud4u@XPS-15-9530:~/Downloads$ vagrant --version  Vagrant 1.7.4 |

## ***BOSH Lite설치***

BOSH Lite를 설치하는 절차는 다음과 같다.

1. BOSH Lite 압축해제

|  |
| --- |
| **$ cd ~/workspace**  **$ unzip <다운로드 디렉토리>/OpenPaaS-Dev-Tools/bosh-lite.zip** |

1. Vagrantfile 수정

* ***온라인의 경우, Vagrantfile의 수정이 필요없다.***
* 오프라인의 경우

|  |
| --- |
| **$ cd bosh-lite**  **$ vi Vagrantfile**  Vagrant.configure('2') do |config|  config.vm.box = 'cloudfoundry/bosh-lite'  config.vm.provider :virtualbox do |v, override|  override.vm.box\_version = '9000.39.0' # ci:replace  # To use a different IP address for the bosh-lite director, uncomment this line:  # override.vm.network :private\_network, ip: '192.168.59.4', id: :local  **override.vm.network :private\_network, ip: '192.168.50.4', id: :local**  **override.vm.network :public\_network**  end  config.vm.provider :aws do |v, override|  override.vm.box\_version = '9000.39.0' # ci:replace  # To turn off public IP echoing, uncomment this line:  # override.vm.provision :shell, id: "public\_ip", run: "always", inline: "/bin/true"  # To turn off CF port forwarding, uncomment this line:  # override.vm.provision :shell, id: "port\_forwarding", run: "always", inline: "/bin/true"  # Following minimal config is for Vagrant 1.7 since it loads this file before downloading the box.  # (Must not fail due to missing ENV variables because this file is loaded for all providers)  v.access\_key\_id = ENV['BOSH\_AWS\_ACCESS\_KEY\_ID'] || ''  v.secret\_access\_key = ENV['BOSH\_AWS\_SECRET\_ACCESS\_KEY'] || ''  v.ami = ''  end  end |

* 붉은 글씨 부분을 추가한다.

1. Vagrant에 BOSH Lite box 추가

* **온라인의 경우, Vagrant up을 실행할 때 자동으로 BOSH Lite box를 추가한다.**
* 오프라인의 경우

|  |
| --- |
| **$ vagrant box add cloudfoundry/bosh-lite** **<다운로드 디렉토리>/OpenPaaS-Env/vagrantbox/bosh-lite.box** |

* 추가하는 box명은 cloudfoundry/bosh-lite 이다.
* Vagrantfile의 config.vm.box에서 선언한 이름과 동일해야 한다.
* 설치패키지의 override.vm.box\_version은 ‘9000.39.0’이다.

1. BOSH Lite 설치

* 온라인의 경우

|  |
| --- |
| **$ vagrant up**  cloud4u@XPS-15-9530:~/workspace/bosh-lite$ vagrant up  Bringing machine 'default' up with 'virtualbox' provider...  ==> default: Box 'cloudfoundry/bosh-lite' could not be found. Attempting to find and install...  default: Box Provider: virtualbox  default: Box Version: 9000.45.0  ==> default: Loading metadata for box 'cloudfoundry/bosh-lite'  default: URL: https://atlas.hashicorp.com/cloudfoundry/bosh-lite  ==> default: Adding box 'cloudfoundry/bosh-lite' (v9000.45.0) for provider: virtualbox  default: Downloading: https://atlas.hashicorp.com/cloudfoundry/boxes/bosh-lite/versions/9000.45.0/providers/virtualbox.box  ==> default: Successfully added box 'cloudfoundry/bosh-lite' (v9000.45.0) for 'virtualbox'!  ==> default: Importing base box 'cloudfoundry/bosh-lite'...  ==> default: Matching MAC address for NAT networking...  ==> default: Checking if box 'cloudfoundry/bosh-lite' is up to date...  ==> default: Setting the name of the VM: bosh-lite\_default\_1441161503381\_13241  ==> default: Clearing any previously set network interfaces...  ==> default: Preparing network interfaces based on configuration...  default: Adapter 1: nat  default: Adapter 2: hostonly  ==> default: Forwarding ports...  default: 22 => 2222 (adapter 1)  ==> default: Running 'pre-boot' VM customizations...  ==> default: Booting VM...  ==> default: Waiting for machine to boot. This may take a few minutes...  default: SSH address: 127.0.0.1:2222  default: SSH username: vagrant  default: SSH auth method: private key  default: Warning: Connection timeout. Retrying...  default:  default: Vagrant insecure key detected. Vagrant will automatically replace  default: this with a newly generated keypair for better security.  default:  default: Inserting generated public key within guest...  default: Removing insecure key from the guest if it's present...  default: Key inserted! Disconnecting and reconnecting using new SSH key...  ==> default: Machine booted and ready!  ==> default: Checking for guest additions in VM...  ==> default: Setting hostname...  ==> default: Configuring and enabling network interfaces...  ==> default: Mounting shared folders...  default: /vagrant => /home/cloud4u/workspace/bosh-lite |

* 오프라인의 경우

|  |
| --- |
| **$ vagrant up**  cloud4u@XPS-15-9530:~/workspace/bosh-lite$ vagrant upBringing machine 'default' up with 'virtualbox' provider...==> default: Importing base box 'cloudfoundry/bosh-lite'...==> default: Matching MAC address for NAT networking...==> default: Setting the name of the VM: bosh-lite\_default\_1438745131006\_83536==> default: Clearing any previously set network interfaces...==> default: Available bridged network interfaces:***1) eth1***2) wlan03) virbr0==> default: When choosing an interface, it is usually the one that is==> default: being used to connect to the internet. default: Which interface should the network bridge to? ***1***  ***#설치한 환경에 따라 network interface의 보기는 다르다. 다만 대체로 물리 NIC의 명명규칙은 ethX를 따르므로 ethX를 선택하도록 한다.***==> default: Preparing network interfaces based on configuration... default: Adapter 1: nat default: Adapter 2: hostonly default: Adapter 3: bridged==> default: Forwarding ports... default: 22 => 2222 (adapter 1)==> default: Booting VM...==> default: Waiting for machine to boot. This may take a few minutes... default: SSH address: 127.0.0.1:2222 default: SSH username: vagrant default: SSH auth method: private key default: Warning: Connection timeout. Retrying...==> default: Machine booted and ready!==> default: Checking for guest additions in VM... default: The guest additions on this VM do not match the installed version of default: VirtualBox! In most cases this is fine, but in rare cases it can default: prevent things such as shared folders from working properly. If you see default: shared folder errors, please make sure the guest additions within the default: virtual machine match the version of VirtualBox you have installed on default: your host and reload your VM.  default: default: Guest Additions Version: 4.3.18 default: VirtualBox Version: 5.0==> default: Configuring and enabling network interfaces...==> default: Mounting shared folders... default: /vagrant => ~/workspace/bosh-lite |

* Vagrantfile이 있는 곳에서 vagrant up을 실행해야 한다.

1. BOSH Lite 로그인

|  |
| --- |
| **$ bosh target 192.168.50.4 lite**  Target set to `Bosh Lite Director'  Your username: **admin**  Enter password: \*\*\*\*\*  Logged in as `admin' |

* Bosh lite의 기본 IP는 192.168.50.4 이다.
* login 기본 사용자와 패스워드는 admin/admin
* 붉은 글씨는 입력항목

1. Route 추가

|  |
| --- |
| **$ sudo bin/add-route** |

1. 생성한 Bosh lite 가상 머신 확인

|  |
| --- |
| **$ cd ~/workspace/bosh-lite**  **$ vagrant ssh**  cloud4u@XPS-15-9530:~/workspace/bosh-lite$ vagrant ssh  Welcome to Ubuntu 14.04.2 LTS (GNU/Linux 3.16.0-45-generic x86\_64)  \* Documentation: https://help.ubuntu.com/  Last login: Wed Aug 5 07:27:34 2015 from 192.168.50.1  vcap@agent-id-bosh-0:~$ |

1. 가상 머신의 vagrant 권한 확인 ***※가상머신에서 실행***

|  |
| --- |
| **$ cd /**  **$ ll**  vcap@agent-id-bosh-0:/$ ll  total 101  drwxr-xr-x 25 root root 4096 Aug 5 07:14 ./  drwxr-xr-x 25 root root 4096 Aug 5 07:14 ../  drwxr-xr-x 2 root root 4096 Aug 5 06:48 bin/  drwxr-xr-x 4 root root 1024 Aug 5 06:48 boot/  drwxr-xr-x 2 root root 4096 Aug 3 03:10 .bundle/  drwxr-xr-x 16 root root 9020 Aug 5 07:27 dev/  drwxr-xr-x 85 root root 4096 Aug 5 07:44 etc/  drwxr-xr-x 4 root root 4096 Aug 3 03:04 home/  lrwxrwxrwx 1 root root 33 Aug 3 03:03 initrd.img -> boot/initrd.img-3.16.0-45-generic  lrwxrwxrwx 1 root root 33 Aug 3 02:58 initrd.img.old -> boot/initrd.img-3.16.0-30-generic  drwxr-xr-x 22 root root 4096 Aug 3 02:59 lib/  drwxr-xr-x 2 root root 4096 Aug 3 02:59 lib64/  drwx------ 2 root root 16384 Aug 3 02:57 lost+found/  drwxr-xr-x 3 root root 4096 Aug 3 02:57 media/  drwxr-xr-x 2 root root 4096 Apr 10 2014 mnt/  drwxr-xr-x 4 root root 4096 Aug 3 03:04 opt/  dr-xr-xr-x 681 root root 0 Aug 5 07:27 proc/  drwx------ 2 root root 4096 Aug 3 03:06 root/  drwxr-xr-x 17 root root 620 Aug 5 10:29 run/  drwxr-xr-x 2 root root 12288 Aug 5 06:48 sbin/  drwxr-xr-x 2 root root 4096 Feb 18 19:33 srv/  dr-xr-xr-x 13 root root 0 Aug 5 07:27 sys/  drwxr-xr-x 10 root root 4096 Aug 5 07:16 temp/  drwxrwx--- 5 root vcap 4096 Aug 5 10:30 tmp/  drwxr-xr-x 10 root root 4096 Aug 3 02:57 usr/  **drwxr-xr-x 10 vcap vcap 4096 Aug 5 07:28 vagrant/**  drwxr-xr-x 12 root root 4096 Aug 3 03:06 var/  lrwxrwxrwx 1 root root 30 Aug 3 03:03 vmlinuz -> boot/vmlinuz-3.16.0-45-generic  lrwxrwxrwx 1 root root 30 Aug 3 02:58 vmlinuz.old -> boot/vmlinuz-3.16.0-30-generic |

* Vagrant의 소유자가 vcap이 아닌 경우 (예: vagrant) 또는 vcap에게 쓰기권한이 없는 경우 bosh deploy를 할 때 오류가 발생한다.

1. 가상 머신의 vagrant의 소유자가 vcap이 아닌 경우만 실행 ***※가상머신에서 실행***

|  |
| --- |
| **#vagrant 백업 디렉토리 생성**  **$ sudo mkdir temp**  **#vagrant 모든파일 백업**  **$ sudo cp -aR vagrant/\* /temp**  **#vagrant 소유자 변경**  **$ sudo chown -hR vcap:vcap /vagrant**  **#소유권 변경 확인**  **$ ll**  ***※이하 소유권이 변경되어 표시되지 않은 경우만 실행***  **#가상 머신 재기동**  **$ sudo reboot**  **#가상 머신이 재기동 한 후, 가상 머신에 로그인**  **$ vagrant ssh**  **#vagrant 파일 확인 *※파일이 존재하는 지, 소유권이 변경 되었는지 확인한다.***  **$ cd /vagrant**  **$ ll**  ***#이하 파일이 없거나 소유권이 변경되지 않은 경우만 실행***  **$ sudo cp -aR /temp/\* /vagrant**  **$ sudo chown -hR vcap:vcap /vagrant** |

## ***로컬 가상머신의 IP 변경***

설치한 가상머신는 IP가 192.168.50.4로 고정되어 있다. 만일 해당 IP를 변경하고 싶다면 vagrant up을 실행하기 전에 Vagrantfile을 수정해야 한다. 수정할 곳은 붉은 표시가 된 곳의 주석을 삭제하고 바꾸고자 하는 IP주소로 변경하면 된다. 또한 route를 추가 할 때 필요한 add-route도 수정해야 한다.

※Vagrantfile 수정

|  |
| --- |
| **$ vi ~/workspace/bosh-lite/Vagrantfile**  Vagrant.configure('2') do |config|  config.vm.box = 'cloudfoundry/bosh-lite'  config.vm.provider :virtualbox do |v, override|  override.vm.box\_version = '9000.38.0' # ci:replace  # To use a different IP address for the bosh-lite director, uncomment this line:  ***#*** override.vm.network :private\_network, ip: '***192.168.59.4***', id: :local  end  config.vm.provider :aws do |v, override|  override.vm.box\_version = '9000.38.0' # ci:replace  # To turn off public IP echoing, uncomment this line:  # override.vm.provision :shell, id: "public\_ip", run: "always", inline: "/bin/true"  # To turn off CF port forwarding, uncomment this line:  # override.vm.provision :shell, id: "port\_forwarding", run: "always", inline: "/bin/true"  # Needed for Vagrant 1.7 since it loads Vagrantfile before downloading the box  env = ENV.to\_hash  v.access\_key\_id = env.fetch('BOSH\_AWS\_ACCESS\_KEY\_ID', '')  v.secret\_access\_key = env.fetch('BOSH\_AWS\_SECRET\_ACCESS\_KEY', '')  v.ami = ''  end  end |

※add-route 수정

|  |
| --- |
| **$ vi ~/workspace/bosh-lite/bin/add-route**  #!/bin/bash  echo "Adding the following route entry to your local route table to enable direct warden container access. Your sudo password may be required."  echo " - net 10.244.0.0/19 via ***192.168.50.4***"  if [ `uname` = "Darwin" ]; then  sudo route delete -net 10.244.0.0/19 ***192.168.50.4*** > /dev/null 2>&1  sudo route add -net 10.244.0.0/19 ***192.168.50.4***  elif [ `uname` = "Linux" ]; then  sudo route add -net 10.244.0.0/19 gw ***192.168.50.4***  fi |

## ***BOSH Lite 설치 Troubleshooting***

1. Bosh login 또는 stemcell의 업로드가 잘 되지 않는 경우, 아래의 명령어로 bosh를 재기동 한다.

|  |
| --- |
| **$ vagrant ssh -c "sudo sv restart director"** |

1. 가상 머신을 삭제할 경우, 아래의 명령어를 사용한다.

|  |
| --- |
| **#가상 머신 삭제**  **$ vagrant destroy**  **또는 Virtualbox에서 해당 가상 머신을 삭제한다.**  **#가상 머신 삭제 확인**  **$ vagrant global-status --prune**  cloud4u@XPS-15-9530:~/workspace/bosh-lite$ vagrant global-status --prune  id name provider state directory  --------------------------------------------------------------------  There are no active Vagrant environments on this computer! Or,  you haven't destroyed and recreated Vagrant environments that were  started with an older version of Vagrant. |

1. Bosh의 Blobstore를 clean할 경우, 아래의 명령어를 사용한다.

|  |
| --- |
| **$ bosh cleanup** |

1. 생성한 BOSH Lite 가상머신에 로그인 할 경우, 아래의 명령어를 사용한다.

|  |
| --- |
| **$ vagrant ssh** |

1. 생성한 Bosh lite는 vagrant halt 또는 virtualbox에서 power off를 실행해서 종료하면 가상이 머신에 오류가 발생 할 수 있다. Virtualbox 등에서 가상 머신을 <Save state>모드로 종료하도록 한다.

1. Vagrant up 실행시 VirtualBox에 가상 머신이 등록되지 않는 경우

|  |
| --- |
| **# 가끔 virtualbox 확장팩 버전과 bosh lite box의 확장팩 버전이 일치 하지 않는 경우 발생한다.**  **# 설치한 가상 머신을 삭제하고 서버를 재기동 한 후, 다시 가상 머신을 설치하면 해결 된다.**  **# 가상 머신 삭제**  **$ vagrant destroy**  # 서버 재시작  **$ sudo reboot**  # 가상 머신 설치  **$ cd ~/workspace/bosh-lite**  **$ vagrant up** |

# OpenPaaS Container 설치, 배포 및 설정

본 절에서는 BOSH Lite에 OpenPaaS Container를 릴리즈하는 절차를 기술한다. Container는 OpenPaaS의 새로운 런타임 아키텍처로 이전 버전의 OpenPaaS의 DEAs와 Health Manager를 대체 한다. 자세한 내용은 다음 사이트를 참조 한다.

참조: <https://github.com/cloudfoundry-incubator/diego-release>

* 환경구성에 필요한 OpenPaaS 설치패키지
  + OpenPaaS-Stemcells
  + OpenPaaS-Controller
  + OpenPaaS-Container
  + OpenPaaS-Env

## ***OpenPaaS Release 업로드***

1. release를 bosh에 업로드

|  |
| --- |
| **$ cd ~/workspace/bosh-lite**  **$ bosh upload release <다운로드 디렉토리>/OpenPaaS-Controller/openpaas-beta-1.0.tgz**  cloud4u@XPS-15-9530:~/workspace/bosh-lite$ bosh upload release ~/WindowShare/install\_package/OpenPaaS-Controller/openpaas-beta-1.0.tgz  Acting as user 'admin' on 'Bosh Lite Director'  Verifying release...  File exists and readable OK  Extract tarball OK  Manifest exists OK  Release name/version OK  Read package 'cloud\_controller\_ng' (1 of 46) OK  Package 'cloud\_controller\_ng' checksum OK  Read package 'debian\_nfs\_server' (2 of 46) OK  Package 'debian\_nfs\_server' checksum OK  Read package 'buildpack\_java' (3 of 46) OK  Package 'buildpack\_java' checksum OK  Read package 'consul' (4 of 46) OK  Package 'consul' checksum OK  Read package 'common' (5 of 46) OK  Package 'common' checksum OK  Read package 'dea\_logging\_agent' (6 of 46) OK  <<중략>>  Started creating new jobs > syslog\_drain\_binder/3a2d78bec4f2abd4772be58f2d17ec573cfe0591. Done (00:00:01)  Started creating new jobs > nats\_stream\_forwarder/b87ef560398075aed9460f29ad22038001d19a26. Done (00:00:00)  Started creating new jobs > routing-api/c196d33887c0fdd64d9a6fa5c0eefcca1da2f27a. Done (00:00:00)  Started creating new jobs > etcd/de6728fbd948f46e48ce7c54f0e17e9c99d4233e. Done (00:00:00)  Started creating new jobs > nats/85db03e1210bb06c485988011be6d49705d1338c. Done (00:00:00)  Started creating new jobs > dea\_next/5d6f58267a8602b3babaebef90577958413eb036. Done (00:00:00)  Started creating new jobs > collector/889b187e2f6adc453c61fd8f706525b60e4b85ed. Done (00:00:00)  Done creating new jobs (00:00:02)  Started release has been created > openpaas/212. Done (00:00:00)  Task 1 done  Started 2015-09-02 02:55:44 UTC  Finished 2015-09-02 02:57:23 UTC  Duration 00:01:39  Release uploaded |

1. release 업로드 확인

|  |
| --- |
| **$ bosh releases**  cloud4u@XPS-15-9530:~/workspace/bosh-lite$ bosh releases  Acting as user 'admin' on 'Bosh Lite Director'  +----------+----------+-------------+  | Name | Versions | Commit Hash |  +----------+----------+-------------+  **| openpaas | 212 | ae2ec7a5+ |**  +----------+----------+-------------+  (+) Uncommitted changes  Releases total: 1 |

## ***OpenPaaS Container Release 업로드***

1. OpenPaaS Container Release 업로드

|  |
| --- |
| **$ cd ~/workspace/bosh-lite**  **$ bosh upload release <다운로드 디렉토리>/OpenPaaS-Container/openpaas-container.tgz**  cloud4u@XPS-15-9530:~/workspace/bosh-lite$ bosh upload release ~/WindowShare/install\_package/OpenPaaS-Container/openpaas-container.tgz  Acting as user 'admin' on 'Bosh Lite Director'  Verifying release...  File exists and readable OK  Extract tarball OK  Manifest exists OK  Release name/version OK  Read package 'route\_emitter' (1 of 27) OK  Package 'route\_emitter' checksum OK  Read package 'nsync' (2 of 27) OK  Package 'nsync' checksum OK  Read package 'converger' (3 of 27) OK  Package 'converger' checksum OK  Read package 'etcd' (4 of 27) OK  Package 'etcd' checksum OK  Read package 'receptor' (5 of 27) OK  Package 'receptor' checksum OK  Read package 'acceptance-tests' (6 of 27) OK  Package 'acceptance-tests' checksum OK  Read package 'garden-linux' (7 of 27) OK  Package 'garden-linux' checksum OK  Read package 'golang\_1.4' (8 of 27) OK  <<중략>>  Started creating new jobs > canary/0bef926471fa854e5521497eec77bd7f0774b845. Done (00:00:00)  Started creating new jobs > auctioneer/8d2e6817a62a76bd7a91bb1c0092d61d5a6dca2f. Done (00:00:00)  Started creating new jobs > file\_server/4dfaa90a6be1c2c7d62355512c0dfb711c4be382. Done (00:00:00)  Started creating new jobs > ssh\_proxy/137c69b592076a95af2408e3d832ef5e2c221cb5. Done (00:00:00)  Started creating new jobs > rep/1fc9f9a01f696db600bc7c92cae964270f2e9455. Done (00:00:00)  Started creating new jobs > tps/19b030497a141c30e082ba37c131f024ff2482b9. Done (00:00:00)  Started creating new jobs > runtime\_metrics\_server/88831f69f5557df5d2d43b7c1353846fa644ba25. Done (00:00:00)  Started creating new jobs > stager/a322ac6deb2c32405ac0db34af8f65f1dd163d3d. Done (00:00:00)  Done creating new jobs (00:00:01)  Started release has been created > diego/0.1304.0. Done (00:00:00)  Task 2 done  Started 2015-09-02 03:03:08 UTC  Finished 2015-09-02 03:03:16 UTC  Duration 00:00:08  Release uploaded |

1. OpenPaaS Container Release 확인

|  |
| --- |
| **$ bosh releases**  cloud4u@XPS-15-9530:~/workspace/bosh-lite$ bosh releases  Acting as user 'admin' on 'Bosh Lite Director'  +----------+----------+-------------+  | Name | Versions | Commit Hash |  +----------+----------+-------------+  | diego | 0.1304.0 | 7ac0bdb3+ |  | openpaas | 212 | ae2ec7a5+ |  +----------+----------+-------------+  (+) Uncommitted changes  Releases total: 2 |

## ***BOSH Stemcell 업로드***

1. BOSH에 Warden Stemcell 업로드

|  |
| --- |
| **$ bosh upload stemcell <다운로드 디렉토리>/OpenPaaS-Stemcells/bosh-warden-boshlite-ubuntu-trusty-go\_agent**  cloud4u@XPS-15-9530:~/workspace/bosh-lite$ bosh upload stemcell bosh-warden-boshlite-ubuntu-trusty-go\_agent  [WARNING] Loading the cli took 5.1 seconds, consider cleaning your gem environment  Acting as user 'admin' on 'Bosh Lite Director'  Verifying stemcell...  File exists and readable OK  Verifying tarball...  Read tarball OK  Manifest exists OK  Stemcell image file OK  Stemcell properties OK  Stemcell info  -------------  Name: bosh-warden-boshlite-ubuntu-trusty-go\_agent  Version: 2776  Checking if stemcell already exists...  No  Uploading stemcell...  bosh-warden-b: 100% |oooooooooooooooooooooooooooooooooooooooooooo| 431.1MB 38.3MB/s Time: 00:00:11  Director task 2  Started update stemcell  Started update stemcell > Extracting stemcell archive. Done (00:00:03)  Started update stemcell > Verifying stemcell manifest. Done (00:00:00)  Started update stemcell > Checking if this stemcell already exists. Done (00:00:00)  Started update stemcell > Uploading stemcell bosh-warden-boshlite-ubuntu-trusty-go\_agent/2776 to the cloud. Done (00:00:13)  Started update stemcell > Save stemcell bosh-warden-boshlite-ubuntu-trusty-go\_agent/2776 (aba374c8-b549-438d-713f-facfdf2bbe5b). Done (00:00:00)  Done update stemcell (00:00:16)  Task 2 done  Started 2015-07-29 05:06:02 UTC  Finished 2015-07-29 05:06:18 UTC  Duration 00:00:16  Stemcell uploaded and created. |

1. Stemcell 업로드 확인

|  |
| --- |
| **$ bosh stemcells**  cloud4u@XPS-15-9530:/bosh-lite-package/stemcells$ bosh stemcells  Acting as user 'admin' on 'Bosh Lite Director'  +---------------------------------------------+----+---------+--------------------------------------+  | Name | OS | Version | CID |  +---------------------------------------------+----+---------+--------------------------------------+  | bosh-warden-boshlite-ubuntu-trusty-go\_agent | | 2776\* | 3b9e6852-85b6-4051-474e-4314dd34142f |  +---------------------------------------------+----+---------+--------------------------------------+  (\*) Currently in-use  Stemcells total: 1 |

## ***OpenPaaS Release 배포***

OpenPaaS Release를 배포한다.

1. Bosh 상태 확인

|  |
| --- |
| **$ bosh status**  cloud4u@XPS-15-9530:~/workspace/bosh-lite$ bosh status  Config  /home/cloud4u/.bosh\_config  Director  Name Bosh Lite Director  URL https://192.168.50.4:25555  Version 1.3062.0 (00000000)  User admin  UUID **cf5f29da-51c9-433f-8c1f-9ae0536d4778**  CPI cpi  dns disabled  compiled\_package\_cache enabled (provider: local)  snapshots disabled  Deployment  not set |

1. Yml 파일을 OpenPaaS환경에 맞게 수정

|  |
| --- |
| **$ cp <다운로드 디렉토리>/OpenPaaS-Deployment/openpaas-beta-lite.yml ~/workspace**  **$ vi ~/workspace/openpaas-beta-lite.yml**  compilation:  cloud\_properties:  name: random  network: cf1  reuse\_compilation\_vms: true  workers: 6  director\_uuid:  **cf5f29da-51c9-433f-8c1f-9ae0536d4778 🡪 조회한 bosh director uuid로 변경**  jobs:  - instances: 1  name: consul\_z1  networks:  - name: cf1  static\_ips:  - 10.244.0.54  persistent\_disk: 1024  properties:  consul:  agent:  mode: server  metron\_agent:  zone: z1  resource\_pool: medium\_z1  templates:  - name: consul\_agent  release: cf  - name: metron\_agent  release: cf  update:  max\_in\_flight: 1  serial: true  <<중략>>  - instances: 0  name: hm9000\_z1  networks:  - name: cf1  properties:  metron\_agent:  zone: z1  networks:  apps: cf1  resource\_pool: medium\_z1  templates:  - name: hm9000  release: cf  - name: metron\_agent  release: cf  update: {}  - instances: 0  name: hm9000\_z2  networks:  - name: cf2  properties:  metron\_agent:  zone: z2  networks:  apps: cf2  resource\_pool: medium\_z2  templates:  - name: hm9000  release: cf  - name: metron\_agent  release: cf  update: {}  - instances: 0  name: runner\_z1  networks:  - name: cf1  properties:  dea\_next:  zone: z1  metron\_agent:  zone: z1  networks:  apps: cf1  resource\_pool: runner\_z1  templates:  - name: dea\_next  release: cf  - name: dea\_logging\_agent  release: cf  - name: metron\_agent  release: cf  update:  max\_in\_flight: 1  <<중략>>  - dns  default\_to\_diego\_backend: true  development\_mode: false  diego\_docker: true  directories: null  disable\_custom\_buildpacks: false  <<중략>>  thresholds:  api:  alert\_if\_above\_mb: null  restart\_if\_above\_mb: null  restart\_if\_consistently\_above\_mb: null  worker:  alert\_if\_above\_mb: null  restart\_if\_above\_mb: null  restart\_if\_consistently\_above\_mb: null  user\_buildpacks: []  users\_can\_select\_backend: false  <<후략>> |

1. Yml 파일을 BOSH Lite에 deployment

|  |
| --- |
| **$ bosh deployment ~/workspace/openpaas-beta-lite.yml**  cloud4u@XPS-15-9530:~/deployments/bosh-lite$ bosh deployment ~/workspace/openpaas-beta-lite.yml  Deployment set to `~/workspace/openpaas-beta-lite.yml' |

1. 업로드한 release를 배포

|  |
| --- |
| **$**  **bosh deploy**  cloud4u@XPS-15-9530:~/workspace/bosh-lite$ bosh deploy  Acting as user 'admin' on deployment 'openpaas-warden' on 'Bosh Lite Director'  Getting deployment properties from director...  Unable to get properties list from director, trying without it...  Cannot get current deployment information from director, possibly a new deployment  Please review all changes carefully  Deploying  ---------  Are you sure you want to deploy? (type 'yes' to continue): yes  Director task 8  Started unknown  Started unknown > Binding deployment. Done (00:00:00)  Started preparing deployment  Started preparing deployment > Binding releases. Done (00:00:00)  Started preparing deployment > Binding existing deployment. Done (00:00:00)  Started preparing deployment > Binding resource pools. Done (00:00:00)  Started preparing deployment > Binding stemcells. Done (00:00:00)  Started preparing deployment > Binding templates. Done (00:00:00)  Started preparing deployment > Binding properties. Done (00:00:00)  Started preparing deployment > Binding unallocated VMs. Done (00:00:00)  Started preparing deployment > Binding instance networks. Done (00:00:00)  <<중략>>  Done updating job etcd\_z1 > etcd\_z1/0 (canary) (00:00:30)  Started updating job postgres\_z1 > postgres\_z1/0 (canary)  Started running pre-start scripts > postgres\_z1. Done (00:00:00)  Done updating job postgres\_z1 > postgres\_z1/0 (canary) (00:00:12)  Started updating job uaa\_z1 > uaa\_z1/0 (canary)  Started running pre-start scripts > uaa\_z1. Done (00:00:00)  Done updating job uaa\_z1 > uaa\_z1/0 (canary) (00:00:35)  Started updating job api\_z1 > api\_z1/0 (canary)  Started running pre-start scripts > api\_z1. Done (00:00:00)  Done updating job api\_z1 > api\_z1/0 (canary) (00:03:27)  Started updating job doppler\_z1 > doppler\_z1/0 (canary)  Started running pre-start scripts > doppler\_z1. Done (00:00:00)  Done updating job doppler\_z1 > doppler\_z1/0 (canary) (00:00:09)  Started updating job loggregator\_trafficcontroller\_z1 > loggregator\_trafficcontroller\_z1/0 (canary)  Started running pre-start scripts > loggregator\_trafficcontroller\_z1. Done (00:00:00)  Done updating job loggregator\_trafficcontroller\_z1 > loggregator\_trafficcontroller\_z1/0 (canary) (00:00:09)  Started updating job router\_z1 > router\_z1/0 (canary)  Started running pre-start scripts > router\_z1. Done (00:00:00)  Done updating job router\_z1 > router\_z1/0 (canary) (00:00:08)  Task 8 done  Started 2015-09-02 04:40:34 UTC  Finished 2015-09-02 04:58:31 UTC  Duration 00:17:57  Deployed `openpaas-warden' to `Bosh Lite Director' |

1. 배포한 release 확인

|  |
| --- |
| **$**  **bosh vms**  cloud4u@XPS-15-9530:~/workspace/bosh-lite$ bosh vms  Acting as user 'admin' on 'Bosh Lite Director'  Deployment `openpaas-warden'  Director task 9  Task 9 done  +------------------------------------+---------+---------------+--------------+  | Job/index | State | Resource Pool | IPs |  +------------------------------------+---------+---------------+--------------+  | api\_z1/0 | running | large\_z1 | 10.244.0.134 |  | consul\_z1/0 | running | medium\_z1 | 10.244.0.54 |  | doppler\_z1/0 | running | medium\_z1 | 10.244.0.138 |  | etcd\_z1/0 | running | medium\_z1 | 10.244.0.42 |  | ha\_proxy\_z1/0 | running | router\_z1 | 10.244.0.34 |  | loggregator\_trafficcontroller\_z1/0 | running | small\_z1 | 10.244.0.142 |  | nats\_z1/0 | running | medium\_z1 | 10.244.0.6 |  | postgres\_z1/0 | running | medium\_z1 | 10.244.0.30 |  | router\_z1/0 | running | router\_z1 | 10.244.0.22 |  | uaa\_z1/0 | running | medium\_z1 | 10.244.0.130 |  +------------------------------------+---------+---------------+--------------+  VMs total: 10 |

## ***OpenPaaS Container Release 배포***

OpenPaaS Container Release를 배포한다.

1. Yml 파일을 수정

|  |
| --- |
| **$ cp <다운로드 디렉토리>/OpenPaaS-Deployment/openpaas-container-beta-lite.yml ~/workspace**  **$ vi ~/workspace/openpaas-container-beta-lite.yml**  compilation:  cloud\_properties: {}  network: diego1  reuse\_compilation\_vms: true  workers: 6  director\_uuid: **cf5f29da-51c9-433f-8c1f-9ae0536d4778 🡪 조회한 bosh director uuid로 변경**  jobs:  - instances: 1  name: etcd\_z1  networks:  - name: diego1  static\_ips:  - 10.244.16.2  persistent\_disk: 1024  resource\_pool: etcd\_z1  templates:  - name: etcd  release: openpaas-container  update:  max\_in\_flight: 1  serial: true  - instances: 0  name: etcd\_z2  networks:  - name: diego2  static\_ips: []  persistent\_disk: 1024  resource\_pool: etcd\_z2  templates:  - name: etcd  release: openpaas-container  update:  max\_in\_flight: 1  serial: true  - instances: 0  name: etcd\_z3  networks:  - name: diego3  static\_ips: []  persistent\_disk: 1024  resource\_pool: etcd\_z3  <<후략>> |

1. Yml 파일을 BOSH Lite에 deployment

|  |
| --- |
| **$ bosh deployment ~/workspace/openpaas-container-beta-lite.yml**  cloud4u@XPS-15-9530:~/workspace/diego-release$ bosh deployment ~/workspace/openpaas-container-beta-lite.yml  Deployment set to `~/workspace/openpaas-container-beta-lite.yml' |

1. OpenPaaS Container Release 배포

|  |
| --- |
| **$ bosh deploy**  cloud4u@XPS-15-9530:~/workspace/bosh-lite$ bosh deployment ~/WindowShare/install\_package/OpenPaaS-Deployment/openpaas-container-beta-lite.yml  Deployment set to `/home/cloud4u/WindowShare/install\_package/OpenPaaS-Deployment/openpaas-container-beta-lite.yml'  cloud4u@XPS-15-9530:~/workspace/bosh-lite$ bosh deploy  Acting as user 'admin' on deployment 'openpaas-warden-container' on 'Bosh Lite Director'  Getting deployment properties from director...  Unable to get properties list from director, trying without it...  Cannot get current deployment information from director, possibly a new deployment  Please review all changes carefully  Deploying  ---------  Are you sure you want to deploy? (type 'yes' to continue): yes  Director task 5  Started unknown  Started unknown > Binding deployment. Done (00:00:00)  Started preparing deployment  Started preparing deployment > Binding releases. Done (00:00:00)  Started preparing deployment > Binding existing deployment. Done (00:00:00)  Started preparing deployment > Binding resource pools. Done (00:00:00)  Started preparing deployment > Binding stemcells. Done (00:00:00)  Started preparing deployment > Binding templates. Done (00:00:00)  Started preparing deployment > Binding properties. Done (00:00:00)  Started preparing deployment > Binding unallocated VMs. Done (00:00:00)  Started preparing deployment > Binding instance networks. Done (00:00:00)  Started preparing package compilation > Finding packages to compile. Done (00:00:00)  <<중략>>  Started updating job cc\_bridge\_z1 > cc\_bridge\_z1/0 (canary)  Started updating job cell\_z1 > cell\_z1/0 (canary)  Started updating job route\_emitter\_z1 > route\_emitter\_z1/0 (canary)  Started updating job access\_z1 > access\_z1/0 (canary)  Started running pre-start scripts > route\_emitter\_z1. Done (00:00:00) > access\_z1. Done (00:00:00)  Done updating job route\_emitter\_z1 > route\_emitter\_z1/0 (canary) (00:00:12)  Done updating job access\_z1 > access\_z1/0 (canary) (00:00:12)  Started running pre-start scripts > cc\_bridge\_z1. Done (00:00:00)  Done updating job cc\_bridge\_z1 > cc\_bridge\_z1/0 (canary) (00:00:17)  Started running pre-start scripts > cell\_z1. Done (00:00:00)  Done updating job cell\_z1 > cell\_z1/0 (canary) (00:00:32)  Task 5 done  Started 2015-09-03 00:28:06 UTC  Finished 2015-09-03 00:31:37 UTC  Duration 00:03:31  Deployed `openpaas-warden-container' to `Bosh Lite Director' |

1. OpenPaaS Container Release 배포 확인

|  |
| --- |
| **$ bosh vms**  cloud4u@XPS-15-9530:~/workspace/bosh-lite$ bosh vms  Acting as user 'admin' on 'Bosh Lite Director'  Deployment `openpaas-warden'  Director task 6  Task 6 done  +------------------------------------+---------+---------------+--------------+  | Job/index | State | Resource Pool | IPs |  +------------------------------------+---------+---------------+--------------+  | api\_z1/0 | running | large\_z1 | 10.244.0.134 |  | consul\_z1/0 | running | medium\_z1 | 10.244.0.54 |  | doppler\_z1/0 | running | medium\_z1 | 10.244.0.138 |  | etcd\_z1/0 | running | medium\_z1 | 10.244.0.42 |  | ha\_proxy\_z1/0 | running | router\_z1 | 10.244.0.34 |  | loggregator\_trafficcontroller\_z1/0 | running | small\_z1 | 10.244.0.142 |  | nats\_z1/0 | running | medium\_z1 | 10.244.0.6 |  | postgres\_z1/0 | running | medium\_z1 | 10.244.0.30 |  | router\_z1/0 | running | router\_z1 | 10.244.0.22 |  | uaa\_z1/0 | running | medium\_z1 | 10.244.0.130 |  +------------------------------------+---------+---------------+--------------+  VMs total: 10  Deployment `openpaas-warden-container'  Director task 7  Task 7 done  +--------------------+---------+------------------+--------------+  | Job/index | State | Resource Pool | IPs |  +--------------------+---------+------------------+--------------+  | access\_z1/0 | running | access\_z1 | 10.244.16.46 |  | brain\_z1/0 | running | brain\_z1 | 10.244.16.6 |  | cc\_bridge\_z1/0 | running | cc\_bridge\_z1 | 10.244.16.14 |  | cell\_z1/0 | running | cell\_z1 | 10.244.16.10 |  | etcd\_z1/0 | running | etcd\_z1 | 10.244.16.2 |  | route\_emitter\_z1/0 | running | route\_emitter\_z1 | 10.244.16.18 |  +--------------------+---------+------------------+--------------+  VMs total: 6 |

## ***OpenPaaS 로그인***

1. openpaas CLI 설치

|  |
| --- |
| **$ sudo tar -xzf <다운로드 디렉토리>/OpenPaaS-Dev-Tools/openpaas-CLI/*openpaas-linux-amd64.tgz* -C /usr/local/bin** |

* OSX의 경우 openpaas-darwin-amd64.tgz를 설치한다.

1. 배포한 OpenPaaS Container Release에 로그인

|  |
| --- |
| **$**  **cf login -a api.10.244.0.34.xip.io -u admin -p admin --skip-ssl-validation**  cloud4u@XPS-15-9530:~/workspace/diego-release$ cf login -a api.10.244.0.34.xip.io -u admin -p admin --skip-ssl-validation  API endpoint: api.10.244.0.34.xip.io  Authenticating...  OK  API endpoint: https://api.10.244.0.34.xip.io (API version: 2.29.0)  User: admin  No org or space targeted, use 'cf target -o ORG -s SPACE' |

## ***배포한 OpenPaaS Container 설정***

1. 조직 작성

|  |
| --- |
| **$ cf create-org *org***  cloud4u@XPS-15-9530:~/workspace/diego-release$ cf create-org org  Creating org org as admin...  OK  TIP: Use 'cf target -o org' to target new org |

* 밑줄친 곳은 변경가능하다.

1. 조직 지정

|  |
| --- |
| **$ cf target -o *org***  cloud4u@XPS-15-9530:~/workspace/diego-release$ cf target -o org  API endpoint: https://api.10.244.0.34.xip.io (API version: 2.29.0)  User: admin  Org: org  Space: No space targeted, use 'cf target -s SPACE' |

* 밑줄친 곳은 변경가능하다.

1. Space 생성

|  |
| --- |
| **$ cf create-space *space***  cloud4u@XPS-15-9530:~/workspace/diego-release$ cf create-space space  Creating space space in org org as admin...  OK  Assigning role SpaceManager to user admin in org org / space space as admin...  OK  Assigning role SpaceDeveloper to user admin in org org / space space as admin...  OK  TIP: Use 'cf target -o space -s space' to target new space |

* 밑줄친 곳은 변경가능하다.

1. Space 지정

|  |
| --- |
| **$ cf target -s *space***  cloud4u@XPS-15-9530:~/workspace/diego-release$ cf target -s space    API endpoint: https://api.10.244.0.34.xip.io (API version: 2.29.0)  User: admin  Org: org  Space: space |

* 밑줄친 곳은 변경가능하다.

## ***OpenPaaS Container설정 Troubleshooting***

1. OpenPaaS Release 타겟 지정에서 오류가 발생하는 경우

|  |
| --- |
| # 오프라인 상태에서 OpenPaaS Container를 타겟 지정 할 경우, 실패한다.  네트워크에 연결하여 온라인 상태로 OpenPaaS Container를 타겟 지정하거나 별도 DNS서버를 구축하여 DNS서버와 연결한 후, OpenPaaS Container를 타겟 지정한다. |

1. 변경 내용: 변경이 발생되는 위치와 변경 내용을 자세히 기록(장/절과 변경 내용을 기술한다.) [↑](#footnote-ref-1)